

TOTAL LAPAROSCOPIC HYSTERECTOMY (TLH) – AN EXPERIENCE IN A TERTIARY CARE CENTER IN WOMEN’S MEDICAL COLLEGE IN ANDHRA PRADESH

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Received : 01/07/2022
Received in revised form : 24/08/2022
Accepted : 31/08/2022

Keywords:

Total laparoscopic hysterectomy (TLH), Abdominal hysterectomy, Vaginal hysterectomy, Abnormal uterine bleeding, blood transfusion, complications.

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DOI: 10.47009/jamp.2022.4.4.49

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2022; 4 (4); 250-254



Abstract

Background: This study is conducted to assess safety and efficacy of total laparoscopic hysterectomy along with review of the demographic data and clinic-pathological indications. Study Design is Retrospective observational study design. **Materials and Methods:** It is a retrospective observational study on 50 women, who underwent Total Laparoscopic Hysterectomy (TLH) in a tertiary care center, SVIMS, Sri Padmavathi Medical College for women, Tirupati, Andhra Pradesh, during the period from January 2018 to December 2021. **Result:** Mean age is 47.5 years. 12 cases (24%) had 1 previous Cesarean section. 6 cases (12%) had more than 1 previous LSCS. The most common indication is AUB-L (leiomyoma) in 26 cases (52%), followed by AUB-A (Adenomyosis) in 10 cases (20%). Uterine size of > 12 weeks is seen in 33 cases (66%) with the largest size being 18 weeks uterus in 4 cases (8%). The mean duration of TLH procedure done was 143 minutes. 3 cases (6%) had postoperative blood transfusions. Conversion to laparotomy was carried out in 3 cases (6%). Post-operative complications encountered in 3 cases (6%). 1 case had vault hematoma, 1 case had port site infection, 1 case had ureteric injury. **Conclusion:** TLH is a safe and effective route for hysterectomy. Patient selection and surgical expertise is important.

INTRODUCTION

One of the most frequently performed surgical procedure in gynecology is hysterectomy.^[1] In India, the prevalence of hysterectomy was 3.2%, highest in Andhra Pradesh (8.9%) and lowest in Assam (0.9%).^[2] Rural India had higher prevalence than urban India.^[2] Hysterectomy can be performed via abdominal, vaginal, laparoscopic and robotic approaches.

Out of these, vaginal hysterectomy is considered to be the least invasive but it has its own set of limitations with respect to patient characteristics like BMI (morbid obese), narrow pubic arch, previous abdominal surgeries, presence of large adnexal mass, large fibroid among others. Both vaginal and laparoscopic approaches are associated with decreased blood loss, shorter hospital stay, faster return to normal activities, and fewer abdominal wall infections when compared with abdominal hysterectomies.^[3,4,5,6]

The technique of total laparoscopic hysterectomy was described by Reich et al in 1988 in Kingston,

Pennsylvania. TLH provides an excellent magnified view of pelvic anatomy and pathology, easy hemostasis and clot evacuation along with other advantages mentioned above at the expense of longer operative time. In view of above evidence it is advisable to perform TLH where ever vaginal approach is not possible.^[5]

While most studies state the superiority of laparoscopic procedure above the open approach, few studies tend to suggest higher rate of bladder and ureteric injuries with the former.^[7,8]

The major road block for laparoscopic gynecological surgeries becoming mainstream and commonly available is learning curve, instrument costs and laparoscopy being technically more demanding than open surgeries.

Aim

This study is conducted to assess safety and efficacy of Total Laparoscopic Hysterectomy (TLH) along with review of the demographic data and clinico-pathological indications.

Objectives

To analyse the surgical outcome of Total Laparoscopic Hysterectomy.

MATERIALS AND METHODS

It is a retrospective observational study on 50 women, who underwent Total Laparoscopic Hysterectomy (TLH) in a tertiary care center, SVIMS, Sri Padmavathi Medical College for women, Tirupati, Andhra Pradesh, during the period from January 2018 to December 2021.

Inclusion Criteria

- Patients with benign conditions
- Patients who has associated adnexal pathology
- Size of uterus < 20 weeks

Exclusion Criteria

- Patients with proven or suspicious malignant lesions were not included
- Size of uterus > 20 weeks
- Prolapse uterus

A total of 50 women were included in the study and their demographic characteristics (age, socioeconomic status, parity) presenting complaints with duration and presenting history, previous treatment history, menstrual history and obstetric history, past medical and surgical history noted. General physical examination, systemic examination, gynecological examination- per speculum and bimanual examination performed. Informed written consent obtained and patients who had previous vaginal deliveries and/or previous LSCS were included in the study, patients who had prolapse uterus and malignant conditions were excluded.

Indication for surgery, duration of surgery, amount of blood loss, conversion to laparotomy if any, intra-operative and post –operative complications, requirement for blood transfusion, duration of hospital stay, wound infection if any were evaluated. Preoperative preparation:

Patient presenting with indications for TLH for benign lesions admitted and evaluated; necessary laboratory and radiological investigations were performed, pre anesthesia checkup done and fitness for surgery obtained. Pap smear and endometrial biopsy were performed for all patients.

Preoperative antibiotics to be given on the day of surgery, bowel prepared with proctoclysis enema given twice (night before surgery and morning on the day of surgery), patient was kept nil by mouth for 8 hours.

Total laparoscopic hysterectomy with bilateral salpingectomy with/ without bilateral/unilateral oophorectomy performed under general anesthesia with patient in Trendelenberg position.

Instruments used

- 10 mm 30-degree telescope, Camera (karl storz HD) with light source

- Energy sources: bipolar, monopolar, harmonic-ultrasonic device, Enseal- advanced bipolar (depending on availability and surgeons preference)
- Uterine manipulator / myoma screw
- Graspers, scissors

Main surgeon stood on the left side of the patient and first assistant on the right side of the patient. Assistant surgeon held the camera and right secondary port. A junior resident at the vaginal end to help with uterine manipulator

Patient Positioning

Patient placed in modified lithotomy position, Trendelenberg position. Ryle's tube inserted to deflate the GI tract, foley's catheterization done in all patients.

Pneumoperitoneum was created using veress needle at umbilicus/ palmars point, closed method of entry after penumoperitoneum using 10 mm supraumbilical port was used to enter the abdomen, 2 or 3 ancilliary 5 mm ports were used. The procedure performed in a standard way after examination of abdomen and pelvis. Specimen retrieval done vaginally by morcellation, vaginal vault sutured vaginally or laparoscopically.^[9] Intraoperative cystoscopy was done in select cases where intraoperative difficulty during bladder dissection was noted.

Post operatively, Foley's urinary catheter was removed in 12 to 24 hours, IV antibiotics 3 doses given, ambulation was restored in 12 hours, LMWH- low molecular weight heparin was given according to WHO risk assessment chart. Patient was allowed to take orals 12 hours after surgery. Patient was discharged approximately around 4 days as per hospital protocol and state health insurance policy.

Institutional Ethical committee was taken. Statistical analysis was done using Microsoft Excel and SPSS software for windows, Version20.0.



RESULTS

Among 50 patients who underwent TLH, mean age is 47.5 years and range are 38 to 66 years. 48 cases (96%) are parous women and 2 cases (4%) are nulliparous; out of 48 women, 12 patients (24%) had previous Cesarean section. 6 patients had more than

1 previous LSCS- Lower segment cesarean section. 33 women (66%) included in the study were tubectomised, 1 case had a previous laparoscopy for ovarian cyst, 3 patients (6%) had previous history of laparotomy (ectopic, appendicectomy).

Among 50 women, 15 cases (30%) were post-menopausal and 21 patients (42%) had comorbidities. Among 21 women with comorbidities, 6 women (12%) had diabetes mellitus while 4 women (8%) had hypertension, exclusively while 4 cases (8%) had both. 4 cases (8%) had hypothyroidism. Other medical disorders (epilepsy, asthma) present in 3 cases (6%). 29 cases (58%) had no co-morbidities.

In the study group, the most common indication is AUB-L (leiomyoma) in 26 cases (52%), followed by AUB-A (Adenomyosis) in 10 cases (20%) and 8 cases (16%) had postmenopausal endometrial hyperplasia. While 3 (6%) cases had benign ovarian cyst; endometrial polyp in 2 cases (4%) and 1 case had CIN 3. Uterine size of > 12 weeks was seen in 33 cases (66%), the largest size being 18 weeks uterus in 4 cases (8%). Uterus more than 18 weeks size was excluded from the study.

The mean duration of TLH procedure done was 143 minutes, shortest time in 45 minutes; the longest being completed in 290 minutes, this case had

severe intra operative bleeding and later converted to laparotomy. TLH with bilateral salpingectomy was done in 29 cases (58%), TLH with bilateral salpingectomy with unilateral oophorectomy done in 6 cases (12%), TLH with bilateral salpingo-oophorectomy done in 15 cases (30%). As the learning curve progressed and experience of operating surgeons, duration of surgery reduced overtime.

Out of 50 women who underwent laparoscopic hysterectomy, 3 cases (6%) had postoperative blood transfusions. Blood loss ranged from 50 ml to 600 ml. Conversion to laparotomy was carried out in 3 cases (6%) owing to severe bleeding in 2 cases and dense adhesions in 1 case (2%). Post-operative complications encountered in 3 cases (6%). 1 case (2%) had vault hematoma, 1 women (2%) had port site infection, 1 case (2%) had ureteric injury. 2 cases (4%) had paralytic ileus. Specimen weight ranged from 50 grams to 1100 grams.

Urinary catheter was removed 12-24 hours after surgery in 44 cases (88 %). Prolonged catheterization (>24hr) was done in 6 cases (12%) owing to densely adherent bladder and difficult dissection. Average duration of post-operative stay was 4 days (3 to 7 days) due to institutional and health scheme policies.

Table 1: Distribution Based on Characteristics of Patients

Characteristics	n= 50	Percentage (%)
Age	47.5 years (38 to 66 years)	
Parity		
Nulliparous	2	4%
Parous	48	96%
1 previous LSCS	12	24%
>1 previous LSCS	6	12%
Menopause	15	30%
Previous history of surgery		
h/o laparotomy	3	6%
h/o laparoscopy	1	2%
Comorbidities	21	42%
Diabetes	6	12%
Hypertension	4	12%
Diabetes and Hypertension	4	12%
Hypothyroid	4	12%
Epilepsy	1	2%
Asthma	2	4%

Table 2: Indications for Hysterectomy

Indication	n=50	Percentage (%)
AUB- L	26	52%
AUB-A	10	20%
Endometrial polyp	2	4%
Endometrial hyperplasia	8	16%
Adnexal pathology	3	6%
CIN 3	1	2%

Table 3: Surgical Outcome

Outcome	Data	Percentage
Operating time	Mean- 143 minutes (45 to 290 minutes)	
<120 minutes	16	32%
>120 minutes	34	68%
Post operative stay	4 (3-7 days)	
Specimen weight	260 grams (50 – 1100 grams)	
Post operative complications		
Vault hematoma	1	2%

Port site infection	1	2%
Ureteric injury	1	2%
Type of procedure		
TLH with bilateral salpingectomy	29 cases	58%
TLH with bilateral salpingectomy with unilateral oophorectomy	6 cases	12%
TLH with bilateral salpingo-oophorectomy	15 cases	30%

DISCUSSION

Laparoscopic hysterectomy, according to American college of obstetrics and gynecologists, is preferred wherever vaginal hysterectomy is not feasible.^[10] The number of hysterectomies performed through laparoscopy has been increasing compared with laparotomy.^[11]

In this study, we analysed the surgical outcome of laparoscopic hysterectomies in 50 patients. Laparoscopic route had early mobilization, early recovery and reduced postoperative pain. Adnexal pathology was tackled simultaneously, an advantage compared to vaginal route. Opportunistic bilateral salpingectomy was performed in all our cases.

Mean age in our study is 47.5 years which is similar to study by Kim et al which is 47.7 years.^[12] In our study AUB- L is most common indication followed by AUB-A which is similar to study by Jin woo shin et al.^[13]

Increased operative time, remains one of the most commonly quoted disadvantage for laparoscopic hysterectomy. In our study average operative time was 143 min, which was reduced gradually with surgeon's experience and improvement in skills. The mean operating time in our study is slightly higher because of multiple surgeons of different expertise levels. The shortest operating time in our study was 45 minutes and longest was 290 minutes. In other studies, operating time by Jin woo shin et al,^[13] Linlina et al,^[14] was 112±33.90 min and 113±36 min respectively.

In our study it is found to be 4 days (3 to 7 days) which is due to hospital policy and state insurance policies. Mean hospital stay reported in a study by Candiani et al,^[15] and Morelli et al,^[16] were 2.7 and 2.9 days respectively.

Out of 50 cases in our study, 3 cases (6%) were converted to laparotomy; 2 cases owing to dense adhesions and 1 case due to severe bleeding, which is high compared to conversion rate of Huseyin C O et al,^[17] which is 2.7-3.9%. A study by Linlina et al,^[14] had 2 cases (0.6%) with intraoperative complications- 1 Bladder injury- recognized and repaired; and 1 case of intraoperative blood loss needing Blood transfusion. Our study had 3 cases of post operative complications: 1 case of vault hematoma, 1 case of ureter injury and 1 case of port site infection; 3 cases had post operative blood transfusion. Vault hematoma was managed conservatively, Ureter injury was managed with the help of urologist by D-J stenting, port site infection responded well to antibiotics.

CONCLUSION

TLH is a safe and effective route for hysterectomy. Patient selection and surgical expertise is important. Team work plays an important role. It provides greater benefit than abdominal route in view of early patient mobilization and early recovery. When compared to vaginal hysterectomy, advantage of TLH is its ability to tackle adnexal pathology simultaneously. It also offers the benefit of opportunistic bilateral salpingectomy in all cases in our study.

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